IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Ronald J. Daley	Group Art Unit:	2419
Serial Number:	10/824,819	Examiner:	Sefcheck, Gregory B.
Filed:	April 15, 2004	Confirmation No.:	6680
Title:	Integrated Interface for a Communication System		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Appellant submits this Appeal Brief subsequent to the filing of a Notice of Appeal on May 11, 2009. Fees in the amount of $540.00 may be charged to Deposit Account No. 08-0385 in the name of Hamilton Sundstrand Corporation.

Real Party in Interest

The real party in interest in this application is Hamilton Sundstrand, a United Technologies Corporation.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 7 and 10 were previously cancelled. Claims 1-6, 8, 9 and 11-17 stand rejected and are pending in the application.

Status of Amendments

All amendments have been entered.

Summary of Claimed Subject Matter

There are two independent claims (claims 1 and 8) in the application. Figure 1 is reproduced below for reference. Independent claim 1 is directed to an integrated interface 100, 118, and 120, for a communication system. The interface includes a bus repeater 100 with an initial data interface 114. [See page 3, paragraphs 13 and 14.] The initial data interface 114 couples the repeater 100 to the main data bus 102. The bus repeater 100 additionally includes a second data interface 116 which couples the repeater 100 to an extended bus 104 and a bus idle detection circuit. A remote terminal 106 is in direct communication with the bus repeater 100, and either the remote terminal 106 or the bus repeater 100 are programmable devices. [See page 5 paragraph 18, and page 6 paragraph 23]. The programmable device is capable of being programmed and reprogrammed using a high level programming language. [See page 5 paragraph 18, and page 6 paragraph 23].

Independent claim 8 is directed to a communication system which incorporates a main data bus 102, an extended data bus 104 and an integrated interface 100, 118, 120. The integrated interface 100, 118, 120 allows communication between the main data bus 102. The extended data bus 104 and includes a bus repeater 100 and a remote terminal 106. [See page 3 paragraphs 13 and 14.] The bus repeater 100 includes a transceiver 114 which couples it to the main bus 102 and a transceiver 116 which couples it to the extended bus 104. [See page 3, paragraph 14.] The remote terminal 106 is in direct communication with the bus repeater 100, and a central computer 107 in communication with the main data bus 102. [See page 3 paragraphs 13 and 14.] At least one of the data buses 102, 104 and the remote terminal 106 are programmable and reprogrammable and are capable of being programmed using a high level programming language. [See page 5 paragraph 18, and page 6 paragraph 23].

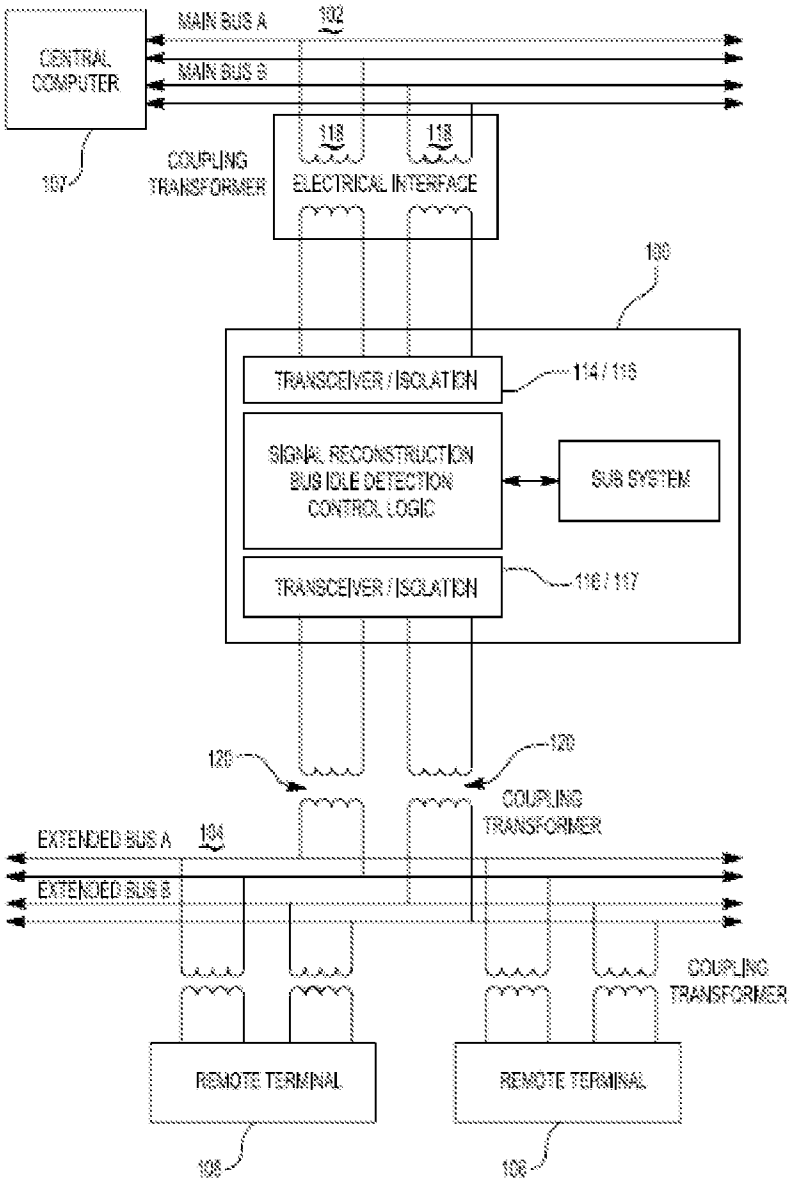
CENTRAL COMPUTER
MAIN BUS A
102
MAIN BUS B
107
COUPLING TRANSFORMER
118
119
ELECTRICAL INTERFACE
130
TRANSCEIVER / ISOLATION
114 / 115
SIGNAL RECONSTRUCTION
BUS IDLE DETECTION
CONTROL LOGIC
SUB SYSTEM
TRANSCEIVER / ISOLATION
116 / 117
125
120
COUPLING TRANSFORMER
EXTENDED BUS A
134
EXTENDED BUS B
COUPLING TRANSFORMER
REMOTE TERMINAL
REMOTE TERMINAL
106
106

Fig - 1

Grounds of Rejection to be Reviewed on Appeal

I. Claims 8, 9, 11, 12, 14, 15, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over admitted prior art (Fig. 3), (hereinafter APA), in view of U.S. Patent Number 5,337,413 to Lui et al. (Hereinafter "Lui").

II. Claims 1-6, 13, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over APA in view of Lui, further in view of U.S. Patent Number 6,701,402 to Alexander, III et al. (hereinafter "Alexander").

Argument

I. Rejection of Claims 8, 9, 11, 12, 14, 15, and 17 under 35 U.S.C. §103(a)

a. Claims 8, 9, 11, 12, 14, 15, and 17

The 103(a) rejection based on the APA in view of Lui fails to establish prima facie obviousness and therefore should be withdrawn. Claims 9, 11, 12, 14, 15, and 17 depend from claim 8, and are not separately contested.

The examiner acknowledged that the APA does not teach a bus repeater or a remote terminal which is programmable and reprogrammable, much less a bus repeater or remote terminal which can be programmed using a high level programming language, as recited in claim 8.

The examiner argued that the act of controlling the temperature of a remote device by providing instructions renders obvious, the claimed device that is "capable of being reprogrammed." The examiner further argued that the programming / reprogramming of the programmable device using a high-level programming language is rendered obvious by Lui.

However, providing instructions to a controller is not analogous to inserting or encoding instructions as is inherent in the definition of programming.

Appellant previously provided evidence that described the art recognized definition of "high level programming language."

"Programming" and "high-level programming language" are terms of art which have a specific meaning which would be known to, and understood by, a person having ordinary skill in

the art. As previously presented, "programming" refers to "insert or encode specific operating instructions into (a machine or apparatus)" (See http://dictionary.reference.com/browse/programming.). The term "high-level programming language" can be found in New Perspectives Computer Concepts, © 2009, Course Technology, Cengage Learning (ISBN-10: 1-4239-2518-1), which describes a high-level programming language as a programming language which "uses command words and grammar based on human languages to provide what computer scientists call a level of abstraction that hides the underlying low-level assembly or machine language. High-level languages, such as COBOL, BASIC, Java, and C, make the programming process easier by replacing unintelligible strings of 1s and 0s or cryptic assembly commands with understandable commands, such as PRINT and WRITE. High-Level language commands eliminate many lines of code by substituting a single high-level command for multiple low-level commands."

The examiner interpreted the device of Lui as disclosing an environment monitoring system which has a host adapter which communicates between a main bus and an extended bus. The extended bus is connected to remote devices which act as ambient temperature controllers. The host adapter of Lui includes a bus repeater which can control the ambient temperature of the remote devices by providing them with control instructions. (see page 3 of the September , 2008 office action).

The examiner responded to the Appellant's prior arguments (see advisory action) by stating "the cited disclosure of Lui illustrates the control program based on human language rather than the underlying machine language, such as in the high level Pascal command format provided (i.e. Temperature of storage device X<= Y degrees)." The Lui patent does not teach the use of a Pascal command format, or a control program utilizing human language to program or reprogram a programmable device. Indeed, the term "Pascal" does not appear at any point in the Lui disclosure nor does any language similar to the language cited by the examiner. Furthermore, the Lui patent does not discuss using human language to create a program at any point. Respectfully, the Examiner's statements linking any human language in his with Pascal programming seems to be speculation.

Accordingly, the rejection does not establish *prima facie* obviousness should be withdrawn.

II. Rejection of Claims 1-6, 13, 16 under 35 U.S.C. §103(a)

a. Claims 1-6, and 16

Claim 1 recites "wherein at least one of said bus repeater and said remote terminal comprises a programmable device capable of being programmed using a high-level programming language and capable of being reprogrammed." Claims 2-6, and 16 each depend from claim 1. For the same reasons discussed above in section I for claim 8, the combination of APA in view of Lui does not establish obviousness because Lui does not teach or suggest programming a reprogrammable component, nor does Lui teach or suggest using a high-level programming language to perform such programming. Adding the teachings of Alexander does not cure the noted issue.

b. Claim 13

Claim 13 depends from claim 8. For the reasons described above in section I for claim 8, the combination of APA in view of Lui does not establish obviousness because teach or suggest programming a reprogrammable component, nor does Lui teach or suggest using a high-level programming language to perform such programming. Adding the teachings of Alexander does not cure the noted issue.

CLOSING

For the reasons set forth above, the final rejection of claims 1-6, 8, 9, and 11-17 is improper and should be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

1. An integrated interface for a communication system, comprising:

a bus repeater having a first data interface to couple with a main bus and a second data interface to couple with an extended bus;

a bus idle detection circuit in the bus repeater;

a remote terminal in direct communication with the bus repeater; and

wherein at least one of said bus repeater and said remote terminal comprises a programmable device capable of being programmed using a high level programming language and capable of being reprogrammed.

2. The integrated interface of claim 1, wherein the first data interface is a first transceiver and the second data interface is a second transceiver.

3. The integrated interface of claim 2, wherein at least one of the first and second transceivers includes analog-to-digital conversion circuitry and includes digital-to-analog conversion circuitry.

4. The integrated interface of claim 1, wherein at least one of the bus repeater and the remote terminal is a programmable device.

5. The integrated interface of claim 1, wherein the bus repeater comprises signal filtering and reconstruction control logic that reconstructs received data and controls a transmit/receive direction of data through the bus repeater.

6. The integrated interface of claim 5, wherein the signal filtering and reconstruction control logic is in a reprogrammable device in the bus repeater.

8. A communication system, comprising:

a main data bus;

an extended data bus;

an integrated interface that forms a communication link between the main data bus and the extended data bus, the integrated interface comprising

a bus repeater having a first transceiver to couple with the main bus and a second transceiver to couple with the extended bus, and

a remote terminal in direct communication with the bus repeater;

a central computer in communication with the main data bus; and

wherein at least one of the bus repeater and the remote terminal is a programmable device capable of being programmed using a high level programming language and capable of being reprogrammed.

9. The communication system of claim 8, wherein at least one of the first and second transceivers includes analog-to-digital conversion circuitry and includes digital-to-analog conversion circuitry.

11. The communication system of claim 8, wherein the bus repeater comprises signal filtering and reconstruction control logic that reconstructs received data and controls a transmit/receive direction of data through the bus repeater.

12. The communication system of claim 11, wherein the signal filtering and reconstruction control logic is in a reprogrammable device in the bus repeater.

13. The communication system of claim 8, further comprising a bus idle detection circuit in the bus repeater.

14. The communication system of claim 8, wherein the system is an aircraft communication system.

15. The communication system of claim 14, further comprising a plurality of remote device terminals in communication with the extended bus, wherein each remote device terminal is associated with an aircraft weapon.

16. The device of claim 1 wherein said programmable device is programmed in a high level programming language and wherein code resulting from said programming or said reprogramming can be ported to another device.

17. The device of claim 8 wherein said programmable device is programmed in a high level programming language and wherein code resulting from said programming or said reprogramming can be ported to another device.

EVIDENCE APPENDIX

Parsons et al., June Jamrich, *"New Perspectives Computer Concepts,"* © 2009, Course Technology, Cengage Learning, Boston, MA (ISBN-10: 1-4239-2518-1), pp. 676.

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PROGRAMMING LANGUAGES AND PARADIGMS

What is a programming language? A **programming language**, or computer language, is a set of keywords and grammar rules designed for creating instructions that a computer can ultimately process or carry out. Most people are familiar with names of popular programming languages, such as BASIC, C, Pascal, FORTRAN, Java, and COBOL. But many other programming languages, such as 8088 assembly, FORTH, LISP, and APL, remain relatively unknown to the general public.

The program you wrote at the beginning of the chapter to change the text color displayed on your computer screen was written in DOS scripting language, which is supported in most versions of Windows.

Just as an English sentence is constructed from various words and punctuation marks that follow a set of grammar rules, each instruction for a computer program consists of keywords and parameters that are held together by a set of rules. A **keyword**, or command, is a word with a predefined meaning for the compiler or interpreter that translates each line of program code into machine language. Keywords for the Pascal computer language include WRITE, READ, IF...THEN, and GOSUB. The Change.bat program you wrote used keywords such as ECHO, SET, IF, PAUSE, and COLOR.

Keywords can be combined with specific **parameters**, which provide more detailed instructions for the computer to carry out. Keywords and parameters are combined with punctuation according to a series of rules called **syntax**, as shown in Figure 12-3.

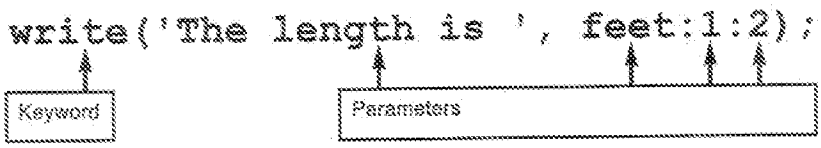

FIGURE 12-3
An instruction for a computer program consists of keywords and parameters, formed into sentence-like statements according to a set of syntax rules.

How are programming languages categorized? Programming languages are categorized in several ways. They can be divided into two major categories: low-level languages and high-level languages. They are also categorized by generation and by paradigm.

What is a low-level language? A **low-level language** typically includes commands specific to a particular CPU or microprocessor family. Low-level languages require a programmer to write instructions for the lowest level of the computer's hardware—that is, for specific hardware elements, such as the processor, registers, and RAM locations. Low-level languages include machine languages and assembly languages.

What is a high-level language? A **high-level language** uses command words and grammar based on human languages to provide what computer scientists call a *level of abstraction* that hides the underlying low-level assembly or machine language. High-level languages, such as COBOL, BASIC, Java, and C, make the programming process easier by replacing unintelligible strings of 1s and 0s or cryptic assembly commands with understandable commands, such as PRINT and WRITE. High-level language commands eliminate many lines of code by substituting a single high-level command for multiple low-level commands (Figure 12-4).

FIGURE 12-4
A single high-level command does the work of multiple low-level commands.

High-level Pascal command

```
Total:=5+4
```

Low-level assembly commands

```
LDA 5
STA Num1
LDA 4
ADD Num1
STA Total
END
```

RELATED PROCEEDINGS APPENDIX

None.